Honeywell

Wireless Heavy-Duty Limit Switch with Eyelet-Pull (WLS Series)

Limitless™ Switch

DESCRIPTION

Honeywell is extending its Limitless™ WLS Series of Heavy Duty Wireless Limit Switches with an eyelet-pull operating head that can be used to attach a rope, cable or chain. It also can be used on cranes as an anti-two-block (A2B) switch.

The Limitless™ Series benefits remote monitoring applications where wiring or wire maintenance is not physically possible or economically feasible. Combining this greater flexibility with proven harsh-duty packaging can result in increased efficiencies and improved safety for machines, equipment, OEMs, and operators.

FEATURES

Wireless design

- Radio (license-free and global): WPAN 802.15.4, 2.4 GHz, point-to-point
- FCC 15, IC, ACMA, ETSI, COFETEL, WPC, IDA, ANATEL, SRRC, and KCC
- Up to 1000 ft [305 m] line of sight communication range when used with a Limitless™ WPMM Series wireless monitor or WDRR Series receiver module (sold separately)
- Reliable, flexible, and secure wireless transmission
- Long-life standard replaceable battery
- Direct or remote mount antenna options

Mechanical design

- IP67/IP68; NEMA 1, 4, 6, 6P, 12, 13
- Unique all-metal drive train
- Zinc head and body are phosphate treated and epoxy finished
- Tested to 750 lb of pull force
- Captive head and body screws

BENEFITS

- Enables presence/absence detection in remote parts of application/machinery, where wiring is an issue or not feasible
- Ability to reconfigure multiple switches that easily allows for adding, subtracting or relocating Limitless™ WLS switches
- Reduces installation/maintenance costs with no wires, conduit, strain relief, clips, connectors, or connection boxes
- Eliminates issues with wire connection integrity on moving equipment
- Consumes ultra-low power to prolong battery life

APPLICATIONS

- Cranes: A2B (anti-two block) switch
- Rope-pull: door activation switch
- Cable pull for production stop applications (e.g., quality, broken tool, maintenance, out of parts); not applicable to human safety-stop applications

Limitless™ Series

Table 1. General Limitless™ WLS-EP Series Specifications

Characteristic	Parameter
Series name	WLS Series
Product type	Limitless™ Wireless Heavy-Duty Limit Switches
Operating characteristics	Operating force: 7 lb approx. or 18 lb approx.
Actuator	Eyelet-pull operating head (pull eyelet in-line with shaft to prevent damage)
Housing material	Zinc head and body are phosphate treated and epoxy finished
Housing type	WLS
Radio type	WPAN 802.15.4; 2.4GHz
Communication agency approvals/certificates*	- FCC 15.247: United States of America - IC RSS 210: Canada - ETSI, CE mark: European countries - ACMA, C-TICK: Australia, New Zealand - IDA: Singapore - COFETEL: Mexico - WPC: India - ANATEL: Brazil - SRRC: China - KCC: South Korea
Antenna type	RP-SMA jack for direct or remote mount antenna options; omni-directional
Signal range	In excess of 305 m [1000 ft] line-of-sight communication between Limitless™ switches and monitor/ receiver when using 2.2 dBi integral antenna
Battery	3.6 Vdc Lithium Thionyl Chloride; 2/3 AA size (Est. life >1yr) Manufactured by Uniwell, part number DEV-10-0009; or Green Energy, part number ER14335M
Sealing	IP67/IP68; NEMA 1, 4, 6, 6P, 12, 13
EMC	Latest applicable standards: EN 300 328, V1.7.1; EN 61326-1 (2006); EN 301 489-1, V1.8.1; EN 301 489-17, V2.1.1
Shock	IEC 60068-2-27; half sine, 10 g, 6 mS, 3 axis
Vibration	IEC 60068-2-6; 10-500Hz w/ 0,35 mm peak-to-peak, 58-500 Hz- 5g
Operating temperature	-40 °C to 85 °C [-40 °F to 185 °F]

*Honeywell is continuing to add new Country Communication Agency Approvals as opportunities and requirements are established.

Table 2. Standard Listings

Part Number	Description
WLS1A11AQ-4P01	Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to left side, 0 dBi omni antenna, for use in US Canada, and Mexico
WLS1A11BQ-4P01	Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to left side, 0 dBi omni antenna, for use in all other approved countries
WLS1A11AQ-P01	Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in US Canada, and Mexico
WLS1A11BQ-P01	Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in all other approved countries
WLS1A11AQ-P02	Limitless™ WLS Series heavy-duty limit switch with 18 lb high-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in US Canada, and Mexico
WLS1A11BQ-P02	Limitless™ WLS Series heavy-duty limit switch with 18 lb high-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in all other approved countries

Wireless Heavy-Duty Limit Switch with Eyelet-Pull

NOMENCLATURE TREES

Limitless™ WLS Side Eyelet Head Switch Nomenclature (used in conjunction with the Limitless™ WLS Switch)

WLS — Switch type: **WLS** Series Wireless

Gen Code	
1	Version 1

RF Code	
A	2.4 GHz; IEEE 802.15.4

Antenna type code	
00	No antenna; RP-SMA connector jack
01	2.2 dBi omni w/switch mount; straight design
02	2.2 dBi omni w/switch mount; tilt/swivel
03	3.0 dBi omni w/remote adhesive mount 9.8 ft cable
04	5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable
05	5.5 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable
06	9.0 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable
07	9.0 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable
08	8.0 dBi omni w/remote bkt. mount, str. design 3 ft cable
09	8.0 dBi omni w/remote bkt. mount, str. design 11 ft cable
10	2.2 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable
11	0 dBi omni w/ switch mount; straight design

Country use code	
A	US, Canada, Mexico
B	All other approved countries[1, 2, 3]

[1]Use with antenna type codes 00 - 03, 05, 10, 11 only; usage also allowed in Country Code A.

[2]Some countries require specific communication certifications. Contact Honeywell for existing certification information.

[3]If Limitless devices are used on machinery that may be shipped globally, use Country Code "B".

Operating head code	
Q	See specials

—

Modification code	
	Head assembled with actuator towards nameplate surface
3	Head assembled with actuator to right side
4	Head assembled with actuator to left side
5	Head assembled with actuator to mounting surface

Specials	
PO1	Eyelet-pull operating head (low force, 7 lb ref.)
PO2	Eyelet-pull operating head (high force, 18 lb ref.)

Limitless™ WPMM Monitor Nomenclature (used in conjunction with the Limitless™ WLS Switch)

WPMM — Switch type: **WPMM** Series Monitor

Gen Code	
1	Version 1

RF Code	
A	2.4 GHz; IEEE 802.15.4

Antenna type code	
00	No antenna; RP-SMA connector jack
01	2.2 dBi omni w/switch mount; straight design
02	2.2 dBi omni w/switch mount; tilt/swivel
03	3.0 dBi omni w/remote adhesive mount 9.8 ft cable
04	5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable
05	5.5 dBi omni w/remote mag. mount, tilt/swivel 10ft cable
06	9.0 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable
07	9.0 dBi omni w/remote mag. mount, tilt/swivel 10ft cable
08	8.0 dBi omni w/remote bkt. mount, str. design 3 ft cable
09	8.0 dBi omni w/remote bkt. mount, str. design 11 ft cable
10	2.2 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable

Country use code	
A	US, Canada, Mexico
B	All other approved countries[1, 2, 3]

[1]Use with antenna type codes 00 - 03, 05, 10, 11 only; usage also allowed in Country Code A.

[2]Some countries require specific communication certifications. Contact Honeywell for existing certification information.

[3]If Limitless devices are used on machinery that may shipped globally, use country code "B".

Limitless™ Series

Limitless™ WDRR Din-Rail Receiver Nomenclature (used in conjunction with the Limitless™ WLS Switch)

WDRR	1	A	00	A	0	A
Switch type	GEN code	RF Code	Antenna type code	Country use code	Output code	Channel code
WDRR Series Din-Rail Receiver	1 Version 1	A 2.4 GHz; IEEE 802.15.4	00 No antenna; RP-SMA connector jack	A US, Canada Mexico	0 NPN/PNP selectable	A 14 channels
			01 2.2 dBi omni w/switch mount; straight design	B All other approved countries[1,2,3]		
			02 2.2 dBi omni w/switch mount; tilt/swivel			
			03 3.0 dBi omni w/remote adhesive mount 9.8 ft cable			
			04 5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable			
			05 5.5 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			
			06 9.0 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable			
			07 9.0 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			
			08 8.0 dBi omni w/remote bkt. mount, str. design 3 ft cable			
			09 8.0 dBi omni w/remote bkt. mount, str. design 11 ft cable			
			10 2.2 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			

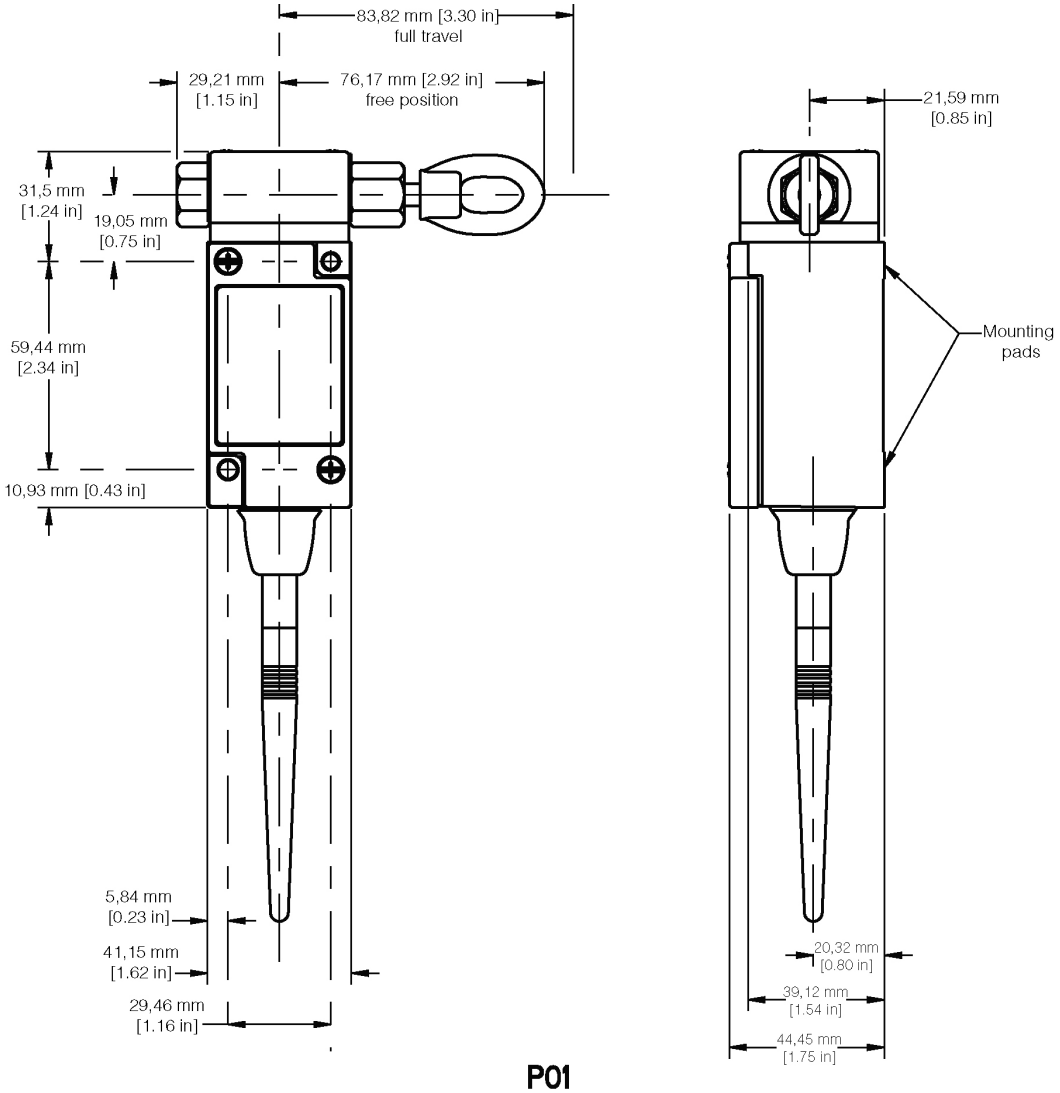
[1] Use with antenna type codes 00 - 03, 05, 10, 11 only; usage allowed in Country Code A.

[2] Some countries require specific communication certifications. Contact Honeywell for existing certification information.

[3] If Limitless™ devices are used on machinery that may be shipped globally, use Country Code “B”.

Wireless Heavy-Duty Limit Switch with Eyelet-Pull

DIMENSIONS



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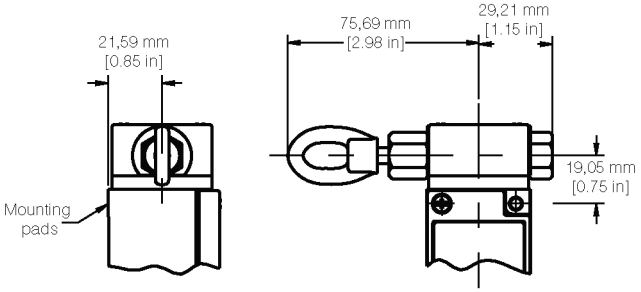
WITH EYELET–PULL OPERATING HEAD
ASSEMBLED PER MODIFICATION CODE 3



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WITH EYELET–PULL OPERATING HEAD
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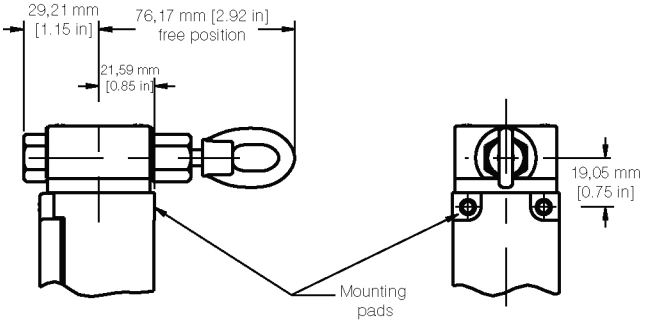

P01
WITH EYELET–PULL OPERATING HEAD
ASSEMBLED PER MODIFICATION CODE 5

Limitless™ Series

ANTENNA OPTIONS

Antenna Type Code "01"

WAN01RSP
straight design, 2.2 dBi gain, direct mount connector

Antenna Type Code "02"

WAN02RSP
tilt & swivel design, 2.2 dBi gain, direct mount connector

Antenna Type Code "03"

WAN03RSP
flat design, 3 dBi gain, adhesive mount

WAN04RSP
tilt & swivel design, 5.5 dBi gain, direct mount connector

Antenna Type Code "04"

WAN05RSP& **WAMM100RSP-005**
T/S, 9 dBi gain, magnetic mount

WAN06RNJ
straight design, 8 dBi gain, bracket mount

Antenna Type Code "11"

WAN07RSP
straight design, 0 dBi gain, direct mount connector

WAN09RSP
low-profile mobile antenna, 3.0 dBi gain, magnetic mount

WAN10RSP
straight mobile antenna, 5.0 dBi gain, magnetic mount

WAN11RSP
low-profile dome antenna, 4.0 dBi gain, through-hole screw mount

WPB1
WPMM mounting bracket

WPR1
WPMM panel mount retainer

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ANTENNA CABLE OPTIONS

WCA200RNPRSP-002 Cable Assembly: 2 ft[1]
WCA200RNPRSP-010 Cable Assembly: 10 ft[1]

[1] *use only with WAN06RNJ antenna and when extra cable is desired*

WCA200RNJRSP-002 Cable Assembly: 2 feet length[2]
WCA200RNJRSP-005 Cable Assembly: 5 feet length[2]
WCA200RNJRSP-010 Cable Assembly: 10 feet length[2]
WCA200RNJRSP-015 Cable Assembly: 15 feet length[2]
WCA200RNJRSP-020 Cable Assembly: 20 feet length[2]

[2] *Use when extra cable length is desired and allows connection from RP-SMA jack to RP-SMA plug*

MOUNTING OPTIONS

Limitless™ Panel Mount Accessories
WAMM100RSP-005 Magnetic Antenna Mount: w/ 5 ft of cable[3]
WAMM100RSP-010 Magnetic Antenna Mount: w/ 10 ft of cable[3]

[3] *Use only with WAN01RSP, WAN02RSP, WAN04RSP, WAN05RSP, or WAN08RSP antennas*

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Wireless Heavy-Duty Limit Switch with Eyelet-Pull

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING

Honeywell does not recommend using devices for critical control applications where there is, or may be, a single point of failure or where single points of failure may result in an unsafe condition. It is up to the end-user to weigh the risks and benefits to determine if the products are appropriate for the application based on security, safety and performance. Additionally, it is up to the end-user to ensure that the control strategy results in a safe operating condition if any crucial segment of the control solution fails. Honeywell customers assume full responsibility for learning and meeting the required Declaration of Conformity, Regulations, Guidelines, etc. for each country in their distribution market.

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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LifeElectronics
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